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ABSTRACT

This paper discusses the use of Scholastic Assessment Test (SAT) scores and other elements affecting institutional accountability in the University of Maryland system. It asserts that SAT scores in and of themselves are not accurate predictors of retention and success. The publication of SAT scores of first-time, full-time freshmen clearly is as not adequately accounting for the large numbers of transfers and part-time students who constitute these universities' complete undergraduate populations. The use of incoming first-time, full-time student SAT scores for purposes of accountability for retention and graduation rates penalizes these institutions. The recommendation is to focus on the 25th, 50th, and 75th percentiles of the distribution of the combined SAT scores, since these data provide a better representation of an institution's freshman class than does the average SAT score of first-time freshmen. These percentiles and the interquartile range measure the degree of homogeneity in SAT scores of a freshman class and thus more adequately describes the undergraduate student body. In a time of budget constraints, issues of technology, of articulation between high schools and two-year and four-year institutions, and of distance learning programs present both challenges and opportunities for institutions now educating a much wider array of students. Better methods will have to be found to track students coming out of new teaching styles such as 'school to work' and 'tech prep' programs. (BF)

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HOLD EVERYTHING!: EMERGING PROBLEMS IN INSTITUTIONAL ACCOUNTABILITY FOR RETENTION AND GRADUATION

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Abstract

In examining the University of Maryland System SAT (Scholastic Aptitude Test) scores for the first-time, full-time freshmen who enrolled in the System's nine of its eleven institutions in Fall 1994 and Dr. Helen F. Giles-Gee's (Associate Vice Chancellor for Academic Affairs and Director of Articulation at the University of Maryland System) study on articulation, this paper takes the position that some academic institutions need to make a very strong case that to use SAT scores to hold them accountable for retention and graduation is quite problematic. This is because the SAT scores of 'incoming freshmen' (first-time, full-time students) do not accurately reflect the 'typical' university student and that in the current educational climate the very use of first-time, full-time students as a measure not only misrepresents but also penalizes those institutions.

Introduction

The literature tells us that only family income is statistically and significantly correlated with SAT scores. Children of high income families score higher on the SAT than anyone else. No other correlation can be demonstrated. Besides, the fact that SAT scores in and of themselves are not accurate predictors of student retention and success is only one of the problems.

The institutional SAT scores come from first-time, full-time students only. Giles-Gee's (1995) study makes it clear that the University of Maryland System is typical of the nation in that an increasingly smaller number of students at four-year institutions are the 'traditional,' first-time, full-time freshmen. Currently, the proportions of first-time, full-time freshmen in the undergraduate programs at many universities are low. The publication of SAT scores of first-time, full-time freshmen clearly does not reflect the large numbers of transfer and part-time students who constitute these universities' complete undergraduate student populations.

SAT Scores of UMS Institutions

The following tables present the SAT (Scholastic Aptitude Test) scores for the first-time, full-time freshmen who enrolled in UMS (University of Maryland System) institutions in Fall 1994. Since UB (University of Baltimore) and UMAB

(University of Maryland at Baltimore) do not enroll first-time freshmen and UMUC (University of Maryland University College) does not require SAT scores, they are not included in the analysis.

Table 1 entails the average verbal, math, and combined scores for each UMS institution, the System's weighted average, and the average for the high school seniors from Maryland and from the Nation who took the test during the 1993-1994 academic year. As revealed in the table, the System's average combined score is around 10% higher than the average combined score for the State and the Nation. This relationship has held stable over the last five years (MHEC Form S-11).

Table 1
UMS Average SAT Scores of Full-Time Freshmen, Fall 1994

Institution	Scores Verbal	Math	Combined
BSU	370	404	774
CSC	381	410	791
FSU	424	477	901
SSU	508	576	1084
TSU	458	511	967
UMBC	511	582	1093
UMCP	508	585	1093
UMES	353	390	743
UMS*	467	530	997
Maryland	429	479	908
US	423	479	902

*Weighted average.
BSU = Bowie State University, CSC = Coppin State College, FSU = Frostburg State University, SSU = Salisbury State University, TSU = Towson State University, UMBC = University of Maryland Baltimore County, UMCP = University of Maryland College Park, UMES = University of Maryland Eastern Shore.
Source: MHEC (Maryland Higher Education Commission) Form S-11.

The average SAT scores in Table 1 are, by themselves, of limited value and should not be used to compare institutions. This is mainly because these averages are based on data with different amounts of variability. In short order, as statisticians Lucy Horwitz and Lou Ferleger (1980:129) point out, if the comparison between averages is to be meaningful, the averages must arise from comparable data bases.

The 25th, 50th, and 75th percentiles of the distribution of the combined SAT scores can provide a better representation of an institution's freshman class than the average SAT scores. Table 2 reveals these percentiles and the interquartile range (Q), which measures the degree of homogeneity (SAT-wise) of the freshman class.

Table 2
UMS Distribution of the Combined SAT Scores of Full-Time Freshmen, Fall 1994

Institution	Percentile 25th	50th	75th	Interquartile Range*
BSU	692	757	850	158
CSC	724	773	845	121
FSU	813	898	988	175
SSU	1014	1075	1152	138
TSU	890	960	1040	150
UMBC	970	1080	1200	230
UMCP	1000	1090	1180	180
UMES	640	730	830	190

*Interquartile Range = 75th percentile - 25th percentile.
Source: MHEC Form S-11.

According to statistician Joseph Healy (1984:70), the Q helps an analyst to measure the distance between the third and the first quartile ($Q = Q_3 - Q_1$). Thus, Q essentially extracts the middle 50% of the cases, thereby avoiding the problem of being based on the most extreme scores.

The Giles-Gee Study

In her essay on articulation, Giles-Gee first provides readers with a background on the issue and then goes on to discuss trends in student movement, the impact of diminished appropriations, the impact of technology, articulation with high school populations, acknowledging the need for change, and creating a new definition of articulation. The rest of this section is a synopsis of Giles-Gee's discourse on these aspects.

As a background note on the issue of articulation, Giles-Gee recounts that some educators perceive articulation as a community college issue. And until the 1980s, she notes, it pretty much was the case. Community college students transferring to four-year colleges often encountered difficulties, such as loss of credits, the lack of scholarships, and the nontransferability of their general-education courses. Two-year colleges, with the support of their advocates, such as the American Association of Community Colleges (AACC), worked diligently to gain access to four-year colleges for their students. But most baccalaureate-degree granting institutions had other priorities, choosing instead to concentrate their energies on recruitment of first-year, first-time students.

Significant changes during the 1980s, which included new trends in the movement of college-bound students, fiscal shortfalls facing institutions of higher education, and federal legislation on "tech prep" and "school to work," pushed policy-makers in higher education to reexamine their priorities. External pressures by legislators forced higher education leaders to reevaluate the performance of their institutions in the area of transfer articulation. Legislative and student interest in transfer efficiency led to demands for greater institutional accountability, in turn propelling the creation of databases and the use of new technology. Consequently, public policies on articulation have influenced both curricula and faculty. Because of all this, Giles-Gee argues that demands for change in higher education's approach to articulation are not going to disappear, and that policy-makers in higher education must respond with a new vision of articulation to address this new reality.

On the issue of trends in student movement, Giles-Gee cites the National Center for Education Statistics (NCES) estimates that attendance at post-secondary institutions reached record levels of almost 14.2 million students in Fall 1991. About 61% of those students were enrolled at four-year institutions, and 39% at two-year institutions.

Nationally, points out Giles-Gee, Fall 1991 enrollment at four-year institutions increased 3.2% over Fall 1990 levels; at two-year colleges, enrollment increased more than twice as fast (7.6%) in the same period. In addition, according to Giles-

Gee, the total number of associate degrees awarded increased by 2.3% from 1989-1990 to 1990-1991. In sum, these data reveal that more two-year students are currently available to enter four-year institutions than at any other time in history.

Giles-Gee further notes that for their part, first-time, first-year enrollments at four-year institutions decreased substantially during the 1980s, according to NCES reports. The end result was that these institutions found themselves relying increasingly on transfer student matriculations to maintain enrollments.

As to the impact of diminished appropriations, Giles-Gee suggests that financial shortfalls in many states have led to reduced appropriations to higher education--even as four-year institutions face increased demands from transfer students for academic programs and resources. To offset their losses, four-year institutions increased the price of tuition. Tuition at these institutions, Giles-Gee points out, outpaced those at community colleges, providing one more reason for college-bound students to consider two-year institutions as their gateway to earning baccalaureate degrees.

Giles-Gee also observes that as the number of students attending community colleges increased, legislators became more interested in transfer efficiency. Before demanding change, most state legislatures requested that higher education entities document the efficiency of the transfer process and the academic achievement of students as they progressed to a baccalaureate degree. Many four-year institutions, according to Giles-Gee, responded with data-collection systems that reported on the academic performance and/or retention and graduation rates of students who transferred to their institutions from two-year colleges. While Giles-Gee agrees that these are valuable data, she argues, however, that they do not measure the effectiveness of the transfer process.

To accurately measure transfer efficiency, suggests Giles-Gee, data-reporting systems that will be capable of tracking students as they move around in the state's educational system must be designed. The creation of such systems, she maintains, will require that administrators from two-year and four-year institutions come together to determine the necessary data elements, hardware, and other resources required to address issues of accountability.

In the case of the impact of technology, Giles-Gee tells us that higher education administrators looking for approaches to save money have benefitted from recent advances in transfer advising technology. She cites the case of Maryland where the electronic transmission of transcripts, combined with new software such as ARTSYS (a product of Sunrise Software Arts, Inc.), has provided the means to evaluate transcripts across networks. This has facilitated a decrease in the number of staff required to key in and verify data.

In addition, Giles-Gee points out that through instructional television, two- and

four-year institutions are now delivering academic programs to new markets. The combined use of television monitors and microphones is making it possible for students at distant sites to participate in classroom discussions. A good example of this is the National Technology University which broadcasts courses via satellite across the United States to engineers at their job sites. Giles-Gee concludes, therefore, that as learning communities are no longer bound by physical location, new partners are pressing for innovative approaches to educate students.

On the issue of articulation with high school populations, Giles-Gee maintains that past models of articulation have centered on the transfer of students from two-year institutions to four-year institutions. But that, too, she contends, is changing. Today, high school populations are emerging who enter four-year institutions with different learning styles and attitudes about education. In addition, Giles-Gee points out that federal "school-to-work" legislation has called for the development of articulation between the high schools and the community colleges in postsecondary programs geared toward providing technical preparation in such fields as engineering technology.

Giles-Gee notes that while articulated programs between high schools and the two-year colleges have prepared some students to advance into college-level courses while still at high school, many of these students, however, might not have considered earning a baccalaureate degree in past years. In fact, she adds, applied curricula are being developed to encourage such students to stay in high school, to enhance their opportunities for learning difficult concepts in an applied manner, and to promote the development of job-related skills.

As a result, according to Giles-Gee, four-year colleges which offer academic programs that parallel those found in the two-year colleges have encountered a number of questions because of this new curricular emphasis. To answer these questions, she suggests that higher education institutions not only must evaluate the content of the applied courses but also must consider the impact the different teaching methods used in the applied courses might have on a student's potential success that use traditional modes of instruction.

Furthermore, Giles-Gee points out that the widespread adoption of "tech prep" curricular raises questions relevant to outcomes of "applied" instruction. Thus, she asks the following questions: Is there a differential impact by gender of "hands-on" applied laboratory instruction? What are the retention rates, as students proceed from course to course within high schools and from secondary institutions to postsecondary institutions? How satisfied are employers with graduates of such programs? What is the success rate of students who move from the applied curriculum to the traditional instruction?

As far as these questions are concerned, Giles-Gee believes that they remain unanswered to date, although thousands of high school students have enrolled in such courses. She therefore calls for the development of partnerships among local educational agencies, two-year and four-year postsecondary institutions to demand informed responses to these questions in order to justify financial investment in equipment, teacher training, and student time. She also suggests that performance assessments to measure academic competence of high school students after taking courses will attest to their readiness for college-level work or the need for remediation.

When it comes to the issue of acknowledging the need for change, Giles-Gee insists that colleges need to transform themselves in order to meet the needs of the diverse array of students. She notes that transfer students are typically older than first-time, first-year students; more likely to be female; and more likely to work to pay their tuition and fees. This reality leads her to raise the following questions: How many colleges have overhauled their operations to address these demographic shifts in their student populations? Have four-year colleges translated new, higher pro-revised orientation programs? Have they reworked their admissions and registration schedules to assure that transfer students are admitted into their upper-level courses?

Unfortunately, Giles-Gee maintains that transfer students still face many problems, especially the transfer of college credits between academic or general-education programs. Two contributing factors to this problem, according to her, include institutional autonomy and faculty prerogatives regarding the curriculum.

Finally, in terms of creating a new definition of articulation, Giles-Gee suggests that it be more broadly defined than the transfer of students from two- to four-year institutions. In addition, she calls for a new vision of articulation which describes the pathways created among learning communities to facilitate the movement of students toward the attainment of academic goals, including an academic degree. Indeed, the creation of these pathways calls for communication within and across institutions and an acknowledgment of the need for proactive effort by all education segments.

As an epilogue, Giles-Gee reminds us that institutions of higher education often address parochial issues; however, they now share more students than ever before. Thus, she insists, new partnerships need to be forged in order to provide students with multiple pathways into postsecondary institutions.

Conclusion

We continue to include the institutional averages of SAT scores in our reports because of the external requests for these data. However, it is obvious that we must shy away from invidious and misleading inter-institutional comparisons. Rather, we should focus on the 25th, 50th, and 75th percentiles of the distribution of the combined SAT scores, since these data provide a better representation of an institution's freshman class than the average SAT score. For example, the 25th percentile marks the point below which the scores of 25% of the freshmen are found. These percentiles and the interquartile range measure the degree of homogeneity (SAT-wise) of a freshman class.

Changes over time within an institution are also of interest, since they point to an increasing (or decreasing) 'selectivity' in the admissions process. However, the institutional mission is critical in assessing those changes. Overall, the quality of the freshmen enrolled in the University of Maryland System institutions, as measured by the SAT, continues to increase in the face of mostly stable state and national scores.

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